## ISSUE SLIP STAPLE AREA (for additional cross references)

| POSITION            | INITIALS | ID NO. | DATE     |  |  |  |  |
|---------------------|----------|--------|----------|--|--|--|--|
| FEE DETERMINATION   | 42       |        | 5/18/99  |  |  |  |  |
| O.I.P.E. CLASSIFIER |          | 49     | 5/2/1/93 |  |  |  |  |
| FORMALITY REVIEW    |          | 61581  | 5-25-11  |  |  |  |  |

## INDEX OF CLAIMS

| Rejected                   | Non-elected   |
|----------------------------|---------------|
| = Allowed                  | 1Interference |
| (Through numeral) Canceled | A Appeal      |
| ÷                          | OObjected     |

|      |     |                   |                             |                |          |               |           | ÷         | • | •••       | •••      | •••• | ••••    | •••• | ••••            | •••••    |
|------|-----|-------------------|-----------------------------|----------------|----------|---------------|-----------|-----------|---|-----------|----------|------|---------|------|-----------------|----------|
|      |     |                   | •                           |                |          | _             | ۸         |           | _ |           |          |      |         |      | _               | _        |
| C    | lai | 3                 | _,                          | ``             | _        | ي ر           | ) Dy      | te        |   |           |          |      | _       |      | ┙               | CI       |
|      |     |                   | 16                          | Z              | Ç        | 7             | 20/2/10   |           | 1 |           | 1        |      |         | l    | ì               | - 1      |
| 7    | ١   | Original Conginal | 12/1/20                     | 180/2          | 1///     | $\mathcal{V}$ | 15        |           | Į |           | İ        |      |         | ı    | ١               | Final    |
| å    | ١   | Ē                 | 8                           | 18             | ြစ်      | ि             | ē         |           |   |           | L        |      |         | L    |                 | ĬĪ.      |
| Elna | 4   | Ŧ                 | Ť                           |                | Τ        | Τ             | Τ         | 1         | ٦ |           | Τ        |      |         |      |                 | L        |
| H    | 1   | 결                 | Г                           | Г              | Τ        | T             | Τ         | T         |   |           | T        |      |         | Γ    | ٦               |          |
| H    | ┪   | 13                | ╁╌                          | <del>  -</del> | 1-       | +             | T         | 7         |   |           | Ť        |      |         | Т    | ٦.              | Г        |
| ┝    | ┥   | 1                 | ╁                           | ╁              | ╁╴       | +             | 十         | 十         | _ | _         | t        |      | Г       | T    | 7               |          |
| H    | 4   | . 5               | ╌                           | $\vdash$       | ╁        | T             | T         | t         | _ | Г         | t        |      | Г       | T    | 7               |          |
| H    | 4   | 4                 | ╁╴                          | ╈              | ╈        | 十             | 十         | +         | _ |           | t        |      | Г       | T    | 7               |          |
| H    | -   |                   | ╀╌                          | 十              | ╁        | 十             | ╈         | +         |   | ┢         | t        |      |         | t    | 7               |          |
| ⊦    | _   | 1                 | 1.                          | ╀              | ╁        | +             | +         | +         | _ | ┢         | †        |      | ✝       | t    | 7               |          |
| H    | -   | H                 | +                           | ╁╴             | +        | ┿             | +         | +         | _ | H         | †        |      | ┪       | +    | ┪               |          |
| H    | _   | 9 - 1 - 1         | <del>.  .</del>             | 4-             | ╁        | ╁             | ╅         | $\dagger$ | - | ┢         | +        |      | H       | †    | ┪               |          |
| Н    | ~   | H                 | <del>\</del>                | +-             | +-       | ╁             | ┿         | +         | _ | ┢         | +        |      | ╁       | ╈    | -               | _  -     |
| ⊦    |     | H                 | 1                           | ╀              | +        | +             | ╅         | +         | - | ┢         | 1        | _    | ╁       | +    | ㅓ.              | _        |
| ŀ    | _   | K                 | -                           | ╀              | ╀        | ╁             | ╁         | +         | _ | ┝         | ┪        | _    | ╁       | +    | ┪               | - F      |
| H    | _   |                   |                             | +-             | ╁        | ╁             | ┿         | +         | - | ╀         | ┪        | -    | ╁       | +    | ᅱ               | r        |
| F    | _   | Ш                 | -                           | +-             | +-       | +             | +         | +         | _ | ╁╌        | ┥        |      | ╁       | +    | ⊣               | <b>-</b> |
| ŀ    | _   | H                 | 1                           | ╀              | ╀        | +             | +-        | +         |   | ╀         | ┨        |      | ╁╌      | +    | ᅱ               | ⊢        |
| L    | _   | 1                 | 4                           | +              | +        | +             | +         | -+        | _ | ╀         | Н        | -    | ╁       | +    | ⊣               | ŀ        |
| L    | _   | 14 15 17 17       | 4                           | +              | 4-       | +             | +         | +         | _ | ╀         | $\dashv$ | _    | ╀       | +    | -1              | <br>     |
| L    |     | Щ                 | 4                           | 4-             | +        | +             | +         | +         | _ | ╀         | 4        | _    | ╀       | +    | -1              | <br> -   |
| L    | _   | 1                 | 4_                          | 4.             | ╀        | 4             |           | 4         | _ | ╀         | 4        | _    | ╀       | 4    |                 | ŀ        |
| L    |     | 2                 | ١                           | L              | ┸        | $\perp$       | $\perp$   | _         | _ | ┸         |          | _    | ╀       | 4    | _               | ⊢        |
|      |     | 2                 | 1<br>2<br>3<br>4)<br>5<br>6 |                |          | .             | $\perp$   | _         | _ | L         |          | L    | ╀       | 4    | _               | -        |
|      |     | 2                 | 2                           | L              | ┸        | _1            |           | _         |   | Į.        | _        | L    | ╀       | 4    | 4               | -        |
|      |     | 2                 | 3                           |                | $\perp$  | $\perp$       | _         | _         | _ | 1         | _        | L    | ╀       | 4    | _               | Ļ        |
|      | _(  | K                 | 4)                          |                | $\perp$  | 1             | _         |           | _ | ┸         | _        | L    | 1       | 4    | _               | Ļ        |
| Į    |     | 12                | 5                           | 1              | $\perp$  | 4             | $\perp$   | _         |   | 1         |          | L    | 1       | 4    | _               | .  -     |
| ſ    |     | 1                 | 6                           | $\perp$        | $\perp$  | ŀ             |           |           |   | ╧         |          | L    | 1       | _    | _               |          |
| ſ    |     | 12                | 7                           | <u> </u>       | 1        | Δl            | 1/        | ⊻         | _ | 1         | _        | L    | $\perp$ | 4    |                 | L        |
| ſ    | _   | 2                 | В                           | П              | П        | П             |           | Ш         | _ | 1         |          | L    | 1       | Ц    | _               | L        |
| ſ    |     | 2                 | 9                           | T              | П        | $\Pi$         | Ш         | Ш         |   | 1         | •        | L    | $\perp$ | ᆜ    |                 |          |
| 1    |     |                   | ic                          | Π              | П        | Ш             | П         | Ш         | L | ┙         |          | L    | $\perp$ |      | _               |          |
| Ī    |     | 3                 | 11                          | П              | $\prod$  | П             | П         | $\perp$   | L | $\perp$   |          | L    | 1       |      |                 | ▎▕       |
| 1    |     | 3                 | 12                          | П              | П        | П             | П         | Ш         |   | $\perp$   |          | L    | 1       |      |                 |          |
| ſ    |     | 1                 | <u>a</u>                    | П              | П        | П             | Ш         | L         | L |           |          | L    | 1       |      |                 |          |
| ١    |     |                   |                             | 1              | ΛI       | $\prod$       | I         |           | L |           |          | L    | 1       |      | $ldsymbol{eta}$ |          |
|      |     | 13                | 2 4 15                      | 4              | V        |               |           |           | Ĺ | 1         |          | L    | $\perp$ |      | _               | 1        |
| 7    |     | 3                 | 16                          | Ť              |          |               |           |           | L | ┙         |          | L    | ┙       |      |                 | 1 1      |
|      |     | 7                 | 37                          | П              | $\neg$   | $\mathbf{L}$  |           | 1         | z |           |          | 1    | ┙       | _    | L               | 1 1      |
|      |     | 73                | 18                          |                | J        | V             |           | V         | ſ | $\rfloor$ | _        | Ĺ    | $\perp$ |      | L               | Į Į      |
| _    |     | ٦                 | 19                          | T              | T        |               |           |           | L | 1         |          | L    |         |      | L               | ] ]      |
|      | 4   | Πį                | 9<br>19                     | T              | T        |               |           |           | ſ | _J        |          |      |         | _    | L               | jl       |
|      | ۲   | 1                 | 11                          | 7              | 7        |               | П         |           | Γ | T         |          | T    | Т       |      |                 | 1 1      |
| •    | 1   | 7                 | E                           | 7              | 7        | _             | П         |           | T | 7         |          | T    | 寸       | _    | Γ               | 7 I      |
|      | ۲   | +                 | 4                           | 7              | ┪        | _             | $\forall$ | _         | t | 7         | _        | T    | ヿ       |      | Γ               | 1        |
| _    | ۲   | +                 | 44                          | +              | -        |               | Ш         | _         | T | 7         |          | 1    | ┪       | _    | Г               | 7        |
| •    | ۲   | +                 | 45                          | +              | $\dashv$ |               | ۲         | Т         | t | ┪         | _        | †    | 7       |      | Τ               | 1 !      |
| 4    | ۴   |                   | 46                          | +              | $\dashv$ | _             | <b>'</b>  | ┢         | t | 7         |          | +    | 寸       | _    | Τ               | 1        |
|      | H   |                   | 47                          | $\dashv$       | $\dashv$ |               | $\vdash$  | $\vdash$  | t | 7         | _        | †    | ┪       | _    | T               | 1        |
|      | H   |                   | 48                          | ᅱ              | $\dashv$ | -             | $\vdash$  | H         | t | ┪         |          | †    | ᅥ       | _    | t               | 1        |
|      | H   |                   | 49                          | $\dashv$       | $\dashv$ | Η-            | $\vdash$  | Н         | † | _         | Г        | †    | $\neg$  | _    | T               | 1        |
|      | ┞   |                   | 50                          | $\dashv$       | ႕        | $\vdash$      | $\vdash$  | -         | t | $\neg$    | -        | +    | ᅥ       | -    | t               | 1        |
|      |     | - 13              | ~ 1                         | - 1            |          |               | 1         |           | _ | _         | _        | _    |         |      | -               |          |

| Cia        | im       |          |           | _ | _  | Dε       | ite      | _         | _        | _            | _  | _  |           | ] |
|------------|----------|----------|-----------|---|----|----------|----------|-----------|----------|--------------|----|----|-----------|---|
| Final      | Original |          |           |   |    |          | T        |           |          |              | T  |    |           |   |
| Œ          |          | +        | +         | 4 |    | L        | +        | -         | _        | +            | +  | ᅱ  | _         | 1 |
| _          | 51<br>52 | ╀        | +         | 4 | _  | ┞        | +        | -         |          | ╀            | +  | ᅥ  | _         | ┨ |
| _          | 53       | +        | +         | 4 |    | ⊢        | ╀        | -         |          | ╀            | +  | -  |           | ┨ |
|            | 54       | +-       | +         | 4 |    | ⊢        | +        | _         | -        | ╀            | +  |    | _         | ┨ |
|            | 55       | ╫        | +         | ┥ |    | ╁╌       | $^{+}$   | -         | ┝        | ╁            | +  | -  | -         | t |
| _          | 56       | ╅        | +         | ٦ | _  | H        | +        |           | ┝        | +            | 7  |    | Г         | 1 |
|            | 57       | ╅        | +         | _ | _  | ✝        | 1        |           | Н        | †            | 7  |    |           | 1 |
| _          | 58       | +        | $\dagger$ |   | _  | T        | †        |           | T        | 1            | ヿ  |    | Г         | ٦ |
| _          | 59       | 十        | $\top$    |   |    | T        | 1        |           |          | T            |    |    |           |   |
|            | 60       |          | T         |   |    | Γ        |          |           |          | I            |    |    |           | _ |
|            | 61       | $\perp$  |           |   |    |          |          |           | L        | $\downarrow$ |    |    | L         | 4 |
|            | 62       |          |           |   |    | L        |          |           | L        | 4            |    |    | L         | 4 |
|            | 63       |          | $\perp$   |   | _  | 1        | ┙        |           | L        | 4            | _  |    | L         | 4 |
|            | 64       |          | _         | _ | L  | ╀        | _        |           | Ļ        | 4            | _  | ļ  | L         | 4 |
| L          | 65       | 4        | 4         |   | 1  | 1        | _        | _         | ╀        | 4            |    | H  | ╀         | - |
| <u> </u>   | 66       | 4        | 4         | _ | L  | +        | _        | _         | ╀        | 4            |    | L  | ╀         | - |
| L          | 67       | +        | -+        |   | ┞  | ╀        | 4        | <u> </u>  | ╀        | -            |    | H  | ╀         | - |
| <u> </u> - | 68       | +        | +         | _ | ╀╌ | +        |          | H         | ╁        | +            | _  | ├  | ╁         | - |
| <u> </u>   | 69       | }        | $\dashv$  | - | ╁  | ╁        | _        | -         | ╁        | $\dashv$     | _  | ┢  | +         | - |
| L          | 70       | -+       | -         |   | ╀  | +        | _        | H         | ╁        | +            | _  | -  | ╁         | - |
| ⊢          | 71       | -        | $\dashv$  |   | ╀  | ╁        | _        | -         | ╀        | ┪            |    | ┝  | +         | _ |
| ⊢          | 72<br>73 | $\dashv$ |           |   | ╀  | ╁        | _        | $\vdash$  | +        | ┨            | _  | H  | ╁         | - |
| ┝          | 74       | $\dashv$ | -         |   | +  | +        |          | ┢         | +        | ┪            | _  | ╁╴ | $\dagger$ | _ |
| H          | 75       | -+       | ┪         | _ | t  | +        | _        | 1         | t        | ٦            | _  | t  | t         | _ |
| H          | 76       | 寸        | 7         | _ | t  | +        | _        | Τ         | †        |              |    | T  | 1         |   |
| H          | 77       | ヿ        |           |   | †  | 7        |          | Γ         | T        |              |    | Γ  | T         |   |
| Г          | 78       | ヿ        |           |   | 1  | 1        | _        | Γ         | Ī        |              |    |    |           | _ |
| r          | 79       |          |           |   | Τ  |          |          |           | I        |              |    | L  | $\perp$   |   |
| Γ          | 80       |          |           |   | Ι  |          |          | L         | 1        |              |    | L  | 1         |   |
|            | 81       |          |           |   |    | $\Box$   |          | L         | 1        |              | L  | Ļ  | 4         |   |
|            | 82       |          |           | L | 1  | 4        |          | Ļ         | 4        |              | ļ  | ∔  | 4         | _ |
|            | 83       | Ш        |           | L | 1  | 4        |          | ╄         | 4        |              | L  | 4- | 4         | _ |
| L          | 84       | Ш        | _         | L | +  | 4        |          | +         | 4        |              | ļ. | +  | 4         | _ |
| L          | 85       | $\vdash$ | _         | L | +  | 4        | _        | ╀         | 4        |              | H  | ╀  | +         |   |
| $\vdash$   | 86       | -        | _         | ┝ | +  | -        | -        | ╀         | +        |              | Ͱ  | ╁  | +         | - |
| -          | 87       | -        | ⊢         | ┞ | ┿  | ┥        | _        | ╁         | ┪        |              | ╁╴ | ╅  | +         | _ |
| ŀ          | 89       |          | ┢         | ┞ | +  | ᅥ        |          | ╁         | +        |              | ╁  | +  | +         | _ |
| ┝          | 90       |          | $\vdash$  | ╁ | +  | -        |          | +         | ┪        |              | t  | 十  | 7         | _ |
| +          | 91       | $\vdash$ | $\vdash$  | + | +  | 4        | _        | $^{+}$    | +        | _            | +  | +  | +         | _ |
| H          | 92       | ╁┈       | ⊢         | ┝ | ╅  | $\dashv$ | -        | ╁         | ┪        | _            | t  | +  | 1         | _ |
| +          | 93       | -        | ⊢         | t | +  | -        | $\vdash$ | +         | $\dashv$ | _            | t  | +  | ┪         | - |
| H          | 94       | -        | t         | t | +  | -        | -        | $\dagger$ | ٦        |              | †  | +  | 7         | _ |
| H          | 95       |          | $\vdash$  | t | +  |          | ┢        | +         | 7        |              | t  | +  | ┪         |   |
| +          | 96       | -        | T         | t | +  | _        | Т        | †         | 7        | _            | T  | 1  |           |   |
| r          | 97       |          | Г         | t | 7  |          | Г        | †         |          |              | T  | 1  |           |   |
| ŀ          | 98       |          | t         | Ť | 7  |          | T        | T         |          |              | I  |    |           |   |
| t          | 99       | 1        | ✝         | t | 7  | _        | Т        | 1         | _        | Г            | Τ  | Т  |           | Г |

|        |          |          |              |           |           |          |           | _ |        |          |                     |          | _        |
|--------|----------|----------|--------------|-----------|-----------|----------|-----------|---|--------|----------|---------------------|----------|----------|
| la     | im       |          |              |           |           | D        | ate       |   | _      |          |                     |          | 1        |
| 121121 | Original |          |              |           |           |          |           |   |        |          |                     |          |          |
|        | 101      |          |              |           | L         | I        | I         |   |        |          | L                   | L        | ]        |
|        | 102      |          |              | Г         | L         | $\perp$  |           |   |        | L        | L                   | 1        | 4        |
|        | 103      |          | L            | L         | ┖         | ┸        | 1         | _ | _      | _        | $\perp$             | L        | 4        |
| _      | 104      |          | _            | ╄         | ╁         | +        | 4         | _ | _      | -        | ╀                   | ╁        | 4        |
| _      | 105      | -        | ┞            | ╀╌        | ╀         | ╁        | +         |   | -      | ⊢        | ╁                   | ╀        | $\dashv$ |
|        | 100      |          | ⊢            | ╁╌        | ╁         | +        | +         |   | ┝      | ╁        | +                   | 十        | ┪        |
|        | 108      |          | ╁            | +         | +-        | +        | +         |   | ┢      | t        | †                   | t        | ٦        |
| _      | 109      | _        | T            | 十         | T         | 十        | 7         |   |        |          | Ĺ                   | I        |          |
|        | 110      |          |              | I         | I         | I        | $\Box$    |   |        | L        | L                   |          | 4        |
|        | 11       |          |              | L         | $\perp$   | 4        | 4         |   | L      | Ļ        | 1                   | 4-       | 4        |
| _      | 112      |          | ┡            | 4         | +         | 4        | -         |   | ⊢      | ╀        | +                   | ╀        | 4        |
| _      | 11:      | -        | ╀            | ╀         | +         | +        | $\dashv$  |   | ╀╌     | ╀        | +                   | ╁        | ┨        |
| -      | 11:      |          | ╁            | ╁╴        | +         | +        | -         | - | ╁      | ╁        | ╁                   | +        | ᅥ        |
|        | 110      |          | +-           | t         | $\dagger$ | +        | _         |   | t      | t        | $\dagger$           | †        | ┨        |
| _      | 11       |          | t            | +         | +         | 7        |           |   | $\top$ | T        |                     |          |          |
| _      | 11       |          | T            |           | Ī         | I        |           |   |        | I        | Ţ                   | $\perp$  |          |
|        | 11       | 9        | I            | L         | I         |          |           | L | L      | 1        | 4                   | 4        | 4        |
|        | 12       |          | L            | $\perp$   |           | _        |           | L | ┸      | ┸        | _                   | 4        | _        |
|        | 12       | 11       | Ţ            | 1         | 1         | _        |           | L | ↓      | +        | 4                   | 4        | _        |
|        | 12       |          | 4            | 4-        | +         | -        | _         | - | ╀      | +        | +                   | +        | _        |
|        | 12       |          | +            | +         | +         | -        |           | ╀ | ╁      | ╁        | +                   | +        |          |
| -      | 12       | _        | +            | ╁         | $\dagger$ | -        |           | ╁ | +      | +        | +                   | 7        | _        |
| _      | 12       | _        | $^{\dagger}$ | +         | 7         |          |           |   | T      |          |                     |          |          |
|        | 12       | 77       | Ι            | I         | $\Box$    |          |           | L | I      | $\perp$  |                     | 4        |          |
| _      |          | 28       | $\downarrow$ | 4         | 4         | _        | _         | Ļ | 4      | 4        | +                   | 4        |          |
| _      |          | 9        | +            | +         | $\dashv$  | _        | -         | ╀ | +      | +        | $\dashv$            | ┥        | _        |
| -      | _        | 30       | +            | +         | $\dashv$  |          | -         | ╁ | +      | ╁        | $\dashv$            | $\dashv$ | _        |
| -      |          | 32       | +            | +         | +         | _        | _         | ╁ | +      | ┪        | 7                   | ┪        | _        |
| Т      |          | 33       | $\top$       | $\top$    | ┪         |          |           | T | T      | 7        |                     |          | Ξ        |
| 1      | 1        | 34       | 1            | I         |           |          |           | L | I      | $\Box$   | $\rightrightarrows$ |          | _        |
| L      |          | 35       | 1            | 4         | _         |          | L         | 1 | 4      | 4        | 4                   | 4        | _        |
| L      |          | 36       | 4            | -         | -1        | _        | ├-        | ╀ | +      | $\dashv$ | $\dashv$            | -        |          |
| ┝      | _        | 37<br>38 | ╅            | $\dashv$  | $\dashv$  | _        | $\vdash$  | ╁ | +      | ┪        | +                   | -        | -        |
| ┝      |          | 39       | $\forall$    | 1         | _         | _        | T         | † | +      | ┪        | 7                   |          | _        |
| r      | _        | 40       | 7            | 7         | $\neg$    |          | T         | T | 1      | T        |                     |          |          |
| r      | 1        | 41       | 7            | $\exists$ |           |          |           |   |        |          |                     |          |          |
| Ľ      | 1        | 42       |              |           |           |          | L         | I | $\bot$ | $\Box$   |                     |          | L        |
| Ĺ      | _        | 43       | _            |           | _         | _        | L         | 1 | 4      | _        | ႕                   |          | -        |
| L      |          | 44       | _            | _         |           | L        | ╀         | + | 4      | 4        | 4                   |          | ┞        |
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